SEQUENCE LISTING

<110> ALVAREZ, Vernon L.
       GONDA, Matthew A.

<120> Treatment of Cell Proliferative Disorders with Chlorotoxin

<130> 51530-5008-WO

<150> US 60/406,033
<151> 2002-08-27

<150> US 60/384,171
<151> 2002-05-31

<160> 95

<170> PatentIn version 3.2

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<213> Leiurus quinquestriatus

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<223> Chlorotoxin

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Cys Leu Cys Arg
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<213> Leiurus quinquestriatus

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His His His His His His Met Cys Met Pro Cys Phe Thr Thr Asp His
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Gln Met Ala Arg Lys Cys Asp Asp Cys Cys Gly Gly Lys Gly Arg Gly
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Lys Cys Tyr Gly Pro Gln Cys Leu Cys Arg
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Tyr Met Cys Met Pro Cys Phe Thr Thr Asp His Gln Met Ala Arg Lys
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Gln Cys Leu Cys Arg
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Gly Pro Gln Cys Leu Cys Arg
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            20   25   30

Cys Leu Cys Arg
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Ala Asp Cys Cys Gly Gly Lys Gly Lys Gly Lys Cys Tyr Gly Pro Gln
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Cys Leu Cys
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Arg Cys Ser Pro Cys Phe Thr Thr Asp Gln Gln Met Thr Lys Lys Cys
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Tyr Asp Cys Cys Gly Gly Lys Gly Lys Gly Lys Cys Tyr Gly Pro Gln
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Cys Ile Cys Ala Pro Tyr
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Lys Gly Arg Gly Lys Ser Tyr
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Thr Asp His Gln Met Ala Arg
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Asp Asp Cys Cys Gly Gly Lys Gly Arg Cys Lys Cys Tyr Gly Pro Gln
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Cys Leu Cys Arg
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       Thr, Trp, Tyr or Val; Xaa at position 5 = Asn or Gln; Xaa at
       position 7 = Ser or Thr; Xaa at position 8 = His, Lys or Arg.

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<400> 14

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<213> Mesobuthus tamulus

<400> 15

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Cys Leu Cys
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Leu Cys

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Cys Ile Cys Ala Pro Tyr
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Asp Cys Cys Gly Gly Lys Gly Lys Gly Lys Cys Tyr Gly Pro Gln Cys
          20              25              30


Ile Cys




<210>  19
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<213>  Mesobuthus martensii


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Met Lys Phe Leu Tyr Gly Ile Val Phe Ile Ala Leu Phe Leu Thr Val
1               5               10              15


Met Phe Ala Thr Gln Thr Asp Gly Cys Gly Pro Cys Phe Thr Thr Asp
          20              25              30


Ala Asn Met Ala Arg Lys Cys Arg Glu Cys Cys Gly Gly Ile Gly Xaa
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Xaa Lys Cys Phe Gly Pro Gln Cys Leu Cys Asn Arg Ile
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Asp Cys Cys Gly Gly Xaa Gly Xaa Xaa Lys Cys Phe Gly Pro Gln Cys
            20   25   30

Leu Cys

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<400>   21
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Met Lys Phe Leu Tyr Gly Ile Val Phe Ile Ala Leu Phe Leu Thr Val
1   5   10   15

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Met Phe Ala Thr Gln Thr Asp Gly Cys Gly Pro Cys Phe Thr Thr Asp
            20                  25              30


Ala Asn Met Ala Arg Lys Cys Arg Glu Cys Cys Gly Gly Ile Gly Lys
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Cys Phe Gly Pro Gln Cys Leu Cys Asn Arg Ile
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Cys Leu Cys Asn Arg
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            20              25              30


Cys Leu Cys
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Arg Asp Cys Cys Gly Gly Gly Lys Lys Cys Phe Gly Pro Gln Cys Leu
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Cys Asn Arg
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Cys
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Arg Ala Cys Cys Lys Gly Xaa Xaa Arg Gly Lys Cys Phe Gly Pro Gln
            20                  25                  30


Cys Leu Cys Gly Tyr Asp
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Cys Leu Cys
        35



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Cys Gly Tyr Asp
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Xaa Xaa Cys Cys Xaa Gly Lys Gly Lys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            20              25                  30


Cys



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Arg Asp Cys Cys Gly Gly Asn Gly Xaa Xaa Lys Cys Phe Gly Pro Gln
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Cys Leu Cys Asn Arg
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        20   25   30

Cys Leu Cys
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Met Cys Met Pro Cys Phe Thr Thr Asp Pro Asn Met Ala Lys Lys Cys
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Arg Asp Cys Cys Gly Gly Asn Gly Lys Cys Phe Gly Pro Gln Cys Leu
        20   25   30

Cys Asn Arg
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Cys

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Cys Gly Pro Cys Phe Thr Thr Asp Pro Tyr Thr Glu Ser Lys Cys Ala
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Thr Cys Cys Gly Gly Xaa Xaa Arg Gly Lys Cys Val Gly Pro Gln Cys
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Leu Cys Asn Arg Ile
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        20   25   30

Leu Cys

<210> 37
<211> 35
<212> PRT
<213> Androctonus mauretanicus

<400> 37

Cys Gly Pro Cys Phe Thr Thr Asp Pro Tyr Thr Glu Ser Lys Cys Ala
1   5   10   15

Thr Cys Cys Gly Gly Arg Gly Lys Cys Val Gly Pro Gln Cys Leu Cys

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            20                    25                    30
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Asn Arg Ile
        35


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<210>  38
<211>  32
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Neurotoxin P2 consensus sequence


<220>
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<222>  (2)..(2)
<223>  Xaa can be Met or Gly

<220>
<221>  MISC_FEATURE
<222>  (9)..(9)
<223>  Xaa can be His or Pro

<220>
<221>  MISC_FEATURE
<222>  (10)..(10)
<223>  Xaa can be Gln or Tyr

<220>
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<222>  (11)..(11)
<223>  Xaa ca be Met or Thr

<220>
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<222>  (12)..(12)
<223>  Xaa can be Ala or Glu

<220>
<221>  MISC_FEATURE
<222>  (13)..(13)
<223>  Xaa can be Arg or Ser

<220>
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<222>  (16)..(16)
<223>  Xaa can be Asp or Ala

<220>
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<222>  (17)..(17)
<223>  Xaa can be Asp or Thr

<220>
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<222>  (25)..(25)
<223>  Xaa can be Gly or Cys
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<220>
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<222>  (26)..(26)
<223>  Xaa can be Lys or Val

<220>
<221>  MISC_FEATURE
<222>  (27)..(27)
<223>  Xaa can be Cys or Gly

<220>
<221>  MISC_FEATURE
<222>  (28)..(28)
<223>  Xaa can be Tyr or Pro

<220>
<221>  MISC_FEATURE
<222>  (29)..(29)
<223>  Xaa can be Gly or Gln

<220>
<221>  MISC_FEATURE
<222>  (30)..(30)
<223>  Xaa can be Pro or Cys

<220>
<221>  MISC_FEATURE
<222>  (31)..(31)
<223>  Xaa can be Gln or Leu

<400>  38
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Cys Xaa Pro Cys Phe Thr Thr Asp Xaa Xaa Xaa Xaa Xaa Lys Cys Xaa
1   5   10   15

Xaa Cys Cys Gly Gly Lys Gly Lys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys
          20   25   30

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<210>  39
<211>  37
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Toxin consensus sequence


<220>
<221>  MISC_FEATURE
<222>  (1)..(37)
<223>  Xaa can be any amino acid

<400>  39
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Met Cys Met Pro Cys Phe Thr Thr Asp Pro Asn Met Ala Lys Lys Cys
1   5   10   15

Arg Asp Cys Cys Gly Gly Lys Gly Xaa Xaa Lys Cys Phe Gly Pro Gln

                    20   25   30

Cys Leu Cys Asn Arg
        35

<210> 40
<211> 35
<212> PRT
<213> Artificial sequence

<220>
<223> Toxin consensus sequence

<220>
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<222> (3)..(3)
<223> Xaa can be Met, Lys or Ser

<220>
<221> MISC_FEATURE
<222> (10)..(10)
<223> Xaa can be His, Pro, or Gln

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Xaa can be Asp, Ala, or Tyr

<400> 40

Arg Cys Xaa Pro Cys Phe Thr Thr Asp Xaa Gln Met Ser Lys Lys Cys
1   5   10   15

Xaa Asp Cys Cys Gly Gly Lys Gly Lys Gly Lys Cys Tyr Gly Pro Gln
        20   25   30

Cys Leu Cys
        35

<210> 41
<211> 35
<212> PRT
<213> Artificial sequence

<220>
<223> Toxin consensus sequence

<400> 41

Met Cys Met Pro Cys Phe Thr Thr Asp Pro Asn Met Ala Arg Lys Cys
1   5   10   15

Arg Asp Cys Cys Gly Gly Arg Gly Lys Cys Phe Gly Pro Gln Cys Leu
        20   25   30

Cys Asn Arg
        35

<210> 42
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Pep8-Ctlx

<400> 42

Cys Gly Gly Lys Gly Arg Gly Lys Cys Tyr
1   5   10

<210> 43
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Pep8-SCX1_BUTSI

<400> 43

Cys Gly Gly Lys Gly Lys Gly Lys Cys Tyr
1   5   10

<210> 44
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Pep8-AF079059_2

<400> 44

Cys Gly Gly Ile Gly Lys Cys Phe Gly Pro
1   5   10

<210> 45
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> Chlorotoxin Peptide 8 consensus sequence

<220>
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<223> Xaa can be Lys or Ile

<400> 45

Cys Gly Gly Xaa Gly Arg Gly Lys Cys Phe Gly Pro
1   5   10

<210> 46
<211> 6
<212> PRT
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<220>
<223> Chlorotoxin Peptide 8 consensus sequence

<220>
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<222> (4)..(4)
<223> Xaa can be Lys or Ile

<400> 46

Cys Gly Gly Xaa Gly Lys
1   5

<210> 47
<211> 10
<212> PRT
<213> Artificial sequence

<220>
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<400> 47

Cys Gly Gly Gly Lys Lys Cys Phe Gly Pro
1   5   10

<210> 48
<211> 12
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<213> Artificial sequence

<220>
<223> Chlorotoxin Peptide 8 consensus sequence

<400> 48

Cys Gly Gly Lys Gly Lys Gly Lys Cys Phe Gly Pro
1   5   10

<210> 49
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<212> PRT
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<223> Chlorotoxin Peptide 8 consensus sequence

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<222> (4)..(5)
<223> Xaa can be Lys or Gly

<400> 49

Cys Gly Gly Xaa Xaa Lys
1   5

<210> 50
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<220>
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<400> 50

Cys Lys Gly Arg Gly Lys Cys Phe Gly Pro
1   5   10

<210> 51
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<220>
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<220>
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<223> Xaa can be Gly or Cys

<400> 51

Cys Gly Xaa Lys Gly Arg Gly Lys Cys Phe Gly Pro
1   5   10

<210> 52
<211> 6
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<220>
<223> Chlorotoxin Peptide 8 consensus sequence

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> Xaa can be Gly or Lys

<400> 52

Cys Xaa Gly Lys Gly Lys
1   5

<210> 53
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Pep8-SCX5_BUTEU sequence

<400> 53

Cys Gly Gly Asn Gly Lys Cys Phe Gly Pro
1   ,   5   10

<210> 54
<211> 12
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<220>
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<220>
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<223> Xaa can be Lys or Asn

<400> 54

Cys Gly Gly Xaa Gly Arg Gly Lys Cys Phe Gly Pro
1   5   10

<210> 55
<211> 6
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<220>
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<220>
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<222> (4)..(4)
<223> Xaa can be Lys or Asn

<400> 55

Cys Gly Gly Xaa Gly Lys
1   5

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<210>  56
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<212>  PRT
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<220>
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<400>  56

Cys Gly Gly Arg Gly Lys Cys Val Gly Pro
1               5                   10


<210>  57
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<220>
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<223>  Xaa can be Tyr or Val

<400>  57

Cys Gly Gly Lys Gly Arg Gly Lys Cys Xaa Gly Pro
1               5                   10


<210>  58
<211>  6
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Chlorotoxin Peptide 8 consensus sequence

<400>  58

Cys Gly Gly Lys Gly Lys
1               5


<210>  59
<211>  12
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<400> 59

Cys Gly Gly Xaa Xaa Arg Gly Lys Cys Phe Gly Pro
1   5   10

<210> 60
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<220>
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<400> 60

Cys Gly Gly Lys Gly Lys Cys Phe Gly Pro
1   5   10

<210> 61
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<400> 61

Thr Thr Asp His Gln Met Ala Arg Lys Cys
1   5   10

<210> 62
<211> 10
<212> PRT
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<220>
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<400> 62

Thr Thr Asp Pro Gln Met Ser Lys Lys Cys
1   5   10

<210> 63
<211> 10
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<223> Xaa can be His or Pro

<400> 63

Thr Thr Asp Xaa Gln Met Ala Lys Lys Cys
1   5   10

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<211> 10
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<400> 64

Thr Thr Asp Gln Gln Met Thr Lys Lys Cys
1   5   10

<210> 65
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<220>
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<223> Xaa can be Ala or Thr

<400> 65

Thr Thr Asp Xaa Gln Met Xaa Lys Lys Cys
1   5   10

<210> 66
<211> 10
<212> PRT
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<220>
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<400> 66

Thr Thr Asp Ala Asn Met Ala Arg Lys Cys
1   5   10

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<220>
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<220>
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<223>    Xaa can be His or Ala

<400>    67

Thr Thr Asp Xaa Asn Met Ala Arg Lys Cys
1                5                    10


<210>    68
<211>    10
<212>    PRT
<213>    Artificial sequence

<220>
<223>    Pep21-JN0361 sequence

<400>    68

Thr Thr Asp Pro Asn Met Ala Asn Lys Cys
1                5                  ‚10


<210>    69
<211>    10
<212>    PRT
<213>    Artificial sequence

<220>
<223>    Chlorotoxin Peptide 21 consensus sequence


<220>
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<222>    (4)..(4)
<223>    Xaa can be either His or Pro

<220>
<221>    MISC_FEATURE
<222>    (8)..(8)
<223>    Xaa can be Arg or Asn

<400>    69

Thr Thr Asp Xaa Asn Met Ala Xaa Lys Cys
1                5                    10


<210>    70
<211>    10
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<212>  PRT
<213>  Artificial sequence

<220>
<223>  Pep21-SCX1_BUTEU sequence

<400>  70

Thr Thr Arg Pro Asp Met Ala Gln Gln Cys
1               5                   10


<210>  71
<211>  10
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Chlorotoxin Peptide 21 consensus sequence


<220>
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<222>  (3)..(3)
<223>  Xaa can be Asp or Arg

<220>
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<222>  (4)..(4)
<223>  Xaa can be His or Pro

<220>
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<222>  (5)..(5)
<223>  Xaa can be Gln or Asp

<220>
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<222>  (8)..(8)
<223>  Xaa can be Arg or Gln

<220>
<221>  MISC_FEATURE
<222>  (9)..(9)
<223>  Xaa can be Lys or Gln

<400>  71

Thr Thr Xaa Xaa Xaa Met Ala Xaa Xaa Cys
1               5                   10


<210>  72
<211>  10
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Pep21-SCX5_BUTEU sequence

<400>  72
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Thr Thr Asp Pro Asn Met Ala Lys Lys Cys
1                 5                   10
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<210> 73
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Chlorotoxin Peptide 21 consensus sequence

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> Xaa can be His or Pro

<400> 73

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Thr Thr Asp Xaa Asn Met Ala Lys Lys Cys
1                 5                   10
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<210> 74
<211> 10
<212> PRT
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<220>
<223> Pep21-SCXP_ANDMA sequence

<400> 74

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Thr Thr Asp Pro Tyr Thr Glu Ser Lys Cys
1                 5                   10
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<210> 75
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<212> PRT
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<220>
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<220>
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<223> Xaa can be Gln or Tyr

<220>
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<223>  Xaa can be Met or Thr

<220>
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<222>  (7)..(7)
<223>  Xaa can be Ala or Glu

<220>
<221>  MISC_FEATURE
<222>  (8)..(8)
<223>  Xaa can be Arg or Ser

<400>  75

Thr Thr Asp Xaa Xaa Xaa Xaa Xaa Lys Cys
1               5                   10


<210>  76
<211>  10
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Chlorotoxin Peptide 21 consensus sequence

<400>  76

Thr Thr Asp Pro Asn Met Ala Lys Lys Cys
1               5                   10


<210>  77
<211>  7
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Chlorotoxin derivative STP-1

<400>  77

Thr Asp Pro Gln Met Ser Arg
1               5


<210>  78
<211>  10
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Peptide 8 sequences

<400>  78

Gly Gly Lys Gly Arg Gly Lys Ser Tyr Gly
1               5                   10


<210>  79
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<211>  9
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Peptide 8a sequence

<400>  79

Gly Lys Gly Arg Gly Lys Ser Tyr Gly
1                   5


<210>  80
<211>  8
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Peptide 8b sequence

<400>  80

Lys Gly Arg Gly Lys Ser Tyr Gly
1                   5


<210>  81
<211>  7
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Peptide 8c sequence

<400>  81

Gly Arg Gly Lys Ser Tyr Gly
1                   5


<210>  82
<211>  10
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Peptide 21 sequence

<400>  82

Thr Thr Asp His Gln Met Ala Arg Lys Ser
1                   5                   10


<210>  83
<211>  8
<212>  PRT
<213>  Artificial sequence

<220>
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<223> Peptide 21b sequence

<400> 83

Asp His Gln Met Ala Arg Lys Ser
1   5

<210> 84
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Peptide 21c sequence

<400> 84

His Gln Met Ala Arg Lys Ser
1   5

<210> 85
<211> 6
<212> PRT
<213> Artificial sequence

<220>
<223> Peptide 21d sequence

<400> 85

Gln Met Ala Arg Lys Ser
1   5

<210> 86
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> Peptide 21a-A1 sequence

<400> 86

Ala Asp His Gln Met Ala Arg Lys Ser
1   5

<210> 87
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> Peptide 21a-A2 sequence

<400> 87

Thr Ala His Gln Met Ala Arg Lys Ser

1   .   5


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<210>   88
<211>   9
<212>   PRT
<213>   Artificial sequence

<220>
<223>   Peptide 21a-A3 sequence

<400>   88

Thr Asp Ala Gln Met Ala Arg Lys Ser
1                   5


<210>   89
<211>   9
<212>   PRT
<213>   Artificial sequence

<220>
<223>   Peptide 21a-A4 sequence

<400>   89

Thr Asp His Ala Met Ala Arg Lys Ser
1                   5


<210>   90
<211>   9
<212>   PRT
<213>   Artificial sequence

<220>
<223>   Peptide 21a-A5 sequence

<400>   90

Thr Asp His Gln Ala Ala Arg Lys Ser
1                   5


<210>   91
<211>   9
<212>   PRT
<213>   Artificial sequence

<220>
<223>   Peptide 21a-A7 sequence

<400>   91

Thr Asp His Gln Met Ala Ala Lys Ser
1                   5


<210>   92
<211>   9
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<212>  PRT
<213>  Artificial sequence

<220>
<223>  Peptide 21a-A8 sequence

<400>  92

Thr Asp His Gln Met Ala Arg Ala Ser
1               5


<210>  93
<211>  9
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Peptide 21a-A9 sequence

<400>  93

Thr Asp His Gln Met Ala Arg Lys Ala
1               5


<210>  94
<211>  9
<212>  PRT
<213>  Mesobuthus tamulus sindicus

<220>
<223>  GenBank Accesssion No. P15229, small toxin

<400>  94

Thr Thr Asp Gln Gln Met Ser Lys Lys
1               5


<210>  95
<211>  9
<212>  PRT
<213>  Leiurus quinquestriatus hebraeu

<220>
<223>  GenBank Accession No. P55966, probable toxin

<400>  95

Thr Thr Asp Pro Gln Met Ser Lys Lys
1               5
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